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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,541	12/28/2005	Francesco Pessolano	NL030781	3960

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EXAMINER	
DUNN, DARRIN D	
ART UNIT	**PAPER NUMBER**
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,541	PESSOLANO ET AL.	
	Examiner	Art Unit	
	Darrin Dunn	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,8 and 10-22* is/are pending in the application.

4a) Of the above claim(s) *5-6, and 9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,8 and 10-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the communication filed on 10/30/2007.

2. Claims 1-22 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view over Shafer et al (USPN 5386247).

5. As per claim 1, Sylliassen teaches a method of controlling an electronic device ([ABSTRACT], [FIG. 1], [0024]) comprising the steps of:

detecting a state of a user ([FIG 4A] e.g., detecting motion)

determining whether, based on the detected state, the user is probably asleep ([0059] e.g., if motion falls below a threshold then system infers user is asleep. The claim terminology 'probably' is interpreted as corresponding to considerable certainty or without much doubt. In the instant reference, an inference is made, based upon a detected state, to determine whether the user is asleep. It is interpreted that during the timed countdown, the system is making a determination whether the user is likely to be asleep based on the sensitivity thresholds in accordance with figure 3);

determining whether, based on this state, the user is asleep ([0059 lines 7-8], [0052] a shutdown timer is activated upon determining a time period has been reached. It is interpreted that the expiration of a timer provides a more definitive, conclusion that the user is asleep)

in response to determining that the user is asleep, switching the electronic device to one of off and a hibernation mode of reduced power consumption ([0059 lines 6-7] e.g., an electronic device is switched to one of the following, i.e., power off)

However, Sylliassen does not disclose that at least one of reducing a volume sound output by the electronic device, reducing a size of an image output by the electronic device, and reducing a quality of an image by the electronic device. Shafer et al. teaches a television sleep timer that gradually turns down the sound volume so that a sudden change in the sound volume will not awaken a sleeping viewer ([COL 1 lines 30-35])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to modify Sylliassen to gradually reduce the sound volume in response to detecting a sleeping state of a user. It is foreseeable that a user may become awakened in response to sudden volume increases. Sylliassen contemplates implementing on-screen displays ([0049 lines 7-10]) during the shutdown process. Shafer et al. provides for on-screen displays used with image systems, wherein the on-screen display adjusts itself in response to a potential sleep state of a user. Since Sylliassen takes into account a sleep state of a user, it would have been obvious to have adjusted the system volume as a gradual means of effectuating a system power down to avoid waking a user.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen USPN 2002/0135474 in view of Shafer et al. (USPN 5386247) and in further view of Stivoric et al (USPN 2007/0100666).

7. As per claim 2, Sylliassen teaches an electronic device which detects the state of a user ([ABSTRACT]). However, Sylliassen, as modified, does not teach an electronic device that expressly measures the user's brainwaves to determine the state of the user. Stivoric et al. teaches turning a television off in response to detecting sleep states ([0132]). Sensor devices detect physiological parameters, including (but not limited to) EOG, i.e., eye movement is measured via brainwaves, Table 1). Furthermore, sleep states include sleep onset [0259] In addition, the accumulated sensor data is applicable to derive activities, including multiple sleep states (Table 2B – sleeping, sleeping while sitting)

At the time the invention was made, one of ordinary skill in the art would have motivation to modify Sylliassen to provide for measuring EOG signals, indicative of brainwaves, as means to detect a sleep state, as taught by Stivoric et al. Stivoric et al. teaches that a television may be turned off upon detecting a sleep state. Since sleep states are detectable via measuring EOG levels, it would have been obvious to detect the sleeping state of a user via tracking eye movement, more commonly known to include REM (rapid eye movement).

8. As per claim 3, Sylliassen, as modified, teaches a method as claimed in claim 1, characterized in that the step of detecting (1) a state of a user comprises detecting his movement ([0059])

9. As per claim 4, Sylliassen, as modified, teaches a method as claimed in claim 3, characterized in that the step of determining (3) whether the user is asleep comprises determining

(3) whether his movement has been detected for a predetermined period of time ([FIG 4A], [0059])

10. As per claim 7, Sylliassen, as modified, teaches a computer program enabling a programmable device to carry out a method as claimed in claim 1, wherein the computer program is stored on a computer readable medium, which when executed by a computer system, carries out the steps claimed in claim 1 ([0023]).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view of Shafer et al (USPN 5386247).

12. As per claim 8, Sylliassen, as modified, teaches an electronic device (21) ([ABSTRACT], [0024]), comprising:

a receiver (23) for receiving ([0023], [0045] e.g., data bus coupled to sensors), from a detector (25) ([0026]) a detection signal indicative of (inherent to detector) a state of a user ([0045] e.g., motion); and

a control unit (27) which is able to use the receiver (23) to receive the detection signal from the detector (25)

determine whether, based on the received detection signal, the user is probably asleep ([0059] e.g., if motion falls below a threshold then system infers user is asleep. The claim terminology 'probably' is interpreted as corresponding to considerable certainty or without much doubt. In the instant reference, an inference is made, based upon a detected state, to determine whether the user is asleep. In accordance with figure 3, sensitivity levels provide for a determination that it is likely or unlikely a user is asleep)

determine whether, based on the received detection signal, the user is asleep ([0052] e.g., if no movement is detected during a shutdown time period, a shutdown signal is generated. It is interpreted that during the shutdown time period, an inference is made that a user may be asleep.)

switch the electronic device to a mode of reduced power consumption in response that the user is asleep ([FIG 6], [0045], [0052], [0059] e.g., processor interpreted as a control for receiving input from sensor indicative of the state of user. The processor determines the state of the user and generates a shutdown signal based on the state, i.e. movement, see FIG 4A-B. In turn, the shutdown signal is sent to AND/OR circuit for effectuating the shutdown of the electronic device. A full power state and a subsequent off state is interpreted as corresponding to reduced power. The degree of reduction is not claimed)

However, Sylliassen does not disclose that at least one of reducing a volume sound output by the electronic device, reducing a size of an image output by the electronic device, and reducing a quality of an image by the electronic device. Shafer et al. teaches a television sleep timer that gradually turns down the sound volume so that a sudden change in the sound volume will not awaken a sleeping viewer ([COL 1 lines 30-35])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to modify Sylliassen to gradually reduce the sound volume in response to detecting a sleeping state of a user. It is foreseeable that a user may become awakened in response to sudden volume increases. Sylliassen contemplates implementing on-screen displays ([0049 lines 7-10]) during the shutdown process. Shafer et al. provides for on-screen displays used with image systems, wherein the on-screen display adjusts itself in response to a potential

sleep state of a user. Since Sylliassen takes into account a sleep state of a user, it would have been obvious to have adjusted the system volume as a gradual means of effectuating a system power down to avoid waking a user.

13. As per claim 10, Sylliassen teaches an electronic device (21) ([ABSTRACT], [0024]) as claimed in claim 8, characterized in that it further comprises a motion detector ([0023])

14. As per claim 11, Sylliassen teaches an electronic device as claimed in claim 8 including:

An output means which generates at least one of an audio signal and a display signal ([0049])

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen USPN 2002/0135474 in view of Shafer et al. (USPN 5386247) and in further view of Stivoric et al (USPN 2007/0100666), and in further view over Gevins et al (USPN 6947790).

16. As per claim 12, Stivoric et al, as modified, teaches detecting a sleep state via measuring brainwaves, supra [0098 –EEG & EOG]. However, the type of brainwaves used to detected sleep state are not disclosed. Gevins et al. teaches that alpha and theta bands are implemented to detect sleep states ([COL 29 lines 32-34]).

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to measure alpha and theta waves as a means to detect a sleep state.

17. As per claim 13, Stivoric et al. teaches the method as claimed in claim 12, wherein the step of determining whether the user is asleep includes determining whether the measured brainwaves are delta or are indicative of REM sleep ([COL 31, Table 3, durative measurements, REM detector)

18. Claims 14,15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view over Shafer et al (USPN 5386247) and in further view of Stivoric et al (USPN 2007/0100666) and in further view of Hardt (USPN 4928704).

19. As per claims 14,15, and 19, Sylliassen, as modified, teaches the step of determining whether the user is probably asleep includes identifying a brainwave pattern that is indicative of at least one of relaxed with eyes closed, sleepy, already sleeping, and in a sleep transition (see Stivoric [0259 – sleep onset] e.g, transition)

However, Sylliasen, as modified, does not specifically disclose identifying the user is asleep using a brainwave pattern indicative of the user being in a deep sleep. Hardt teaches the implementation of an EEG, wherein a delta wave (indicative of deep sleep) is measured. Since Stivoric et al. provides for an EEG to measure a user's brainwave to detect a sleep state, it would have been obvious to have detected a deep sleep state using delta waves.

20. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view over Shafer et al (USPN 5386247) and in further view of Stivoric et al (USPN 2007/0100666).

21. As per claim 16, Syliassen, as modified, teaches the method as claimed in claim 15, wherein:

the step of determining that the user is probably asleep additionally includes determining whether movement has been detected for a predetermined period of time ([FIG 4A] e.g., countdown time window); and

the step of determining that the user is asleep additionally includes determining whether movement has been detected for a predetermined period of time ([FIG 4A] e.g., expiration of timer)

22. As per claim 17, Sylliasen, as modified, teaches an electronic device including a processor programmed to perform the steps claimed in claim 1 ([FIG 1 – 101])

23. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view of Shafer et al (USPN 5386247) and in further view of Stivoric et al. (USPN 2007/0100666).

24. As per claim 18, Sylliassen, as modified by Shafer et al., does not teach a brainwave detector that generates a detection signal. However, Stivoric et al. teaches a brainwave detector, i.e., EEG and/or EOG (Page 6, Table 1).

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to modify Sylliassen to include either an EEG and/or an EOG to detect the sleeping state of a user. Sylliassen turns off an electronic device in response to a sleeping state of a user. Stivoric et al. teaches running off the television in response to a sleeping state of a user, wherein the sleeping states are detected via EEG and/or EOG. Therefore, it would have been obvious to one of ordinary skill in the art to provide an additional, known means of detecting a sleeping state of a user to turn off an electronic device.

25. As per claim 20, Sylliassen, as modified by Stivoric et al., teaches a motion detector which outputs a second detection signal based on detected motion ([FIG 4A – 425], [0046]); and

wherein the control unit determines whether the user is probably asleep based on the brainwave detection signal (see Stivoric [0259 – sleep onset] e.g, transition) and the motion

detection signal ([see Sylliassen [FIG 4A]), and determined whether the user is asleep based on both the brainwave detection signal and the motion detection signal (either a motion and/or EEG/EOG are implemented. The terminology 'both' does not express the relationship between the motion and brainwave detector).

26. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view of Shafer et al (USPN 5386247), in further view of Stivoric et al. (USPN 2007/0100666), and in further view of Gevins et al (USPN 6947790).

27. As per claim 21, Sylliassen, as modified teaches determining the user is asleep based on brainwave detection being indicative of delta waves or REM sleep (see Stivoric [COL 31 Table 3]) However, it does not teach the use of brainwave signals (theta or alpha) to indicate a probable sleep state based on alpha or theta waves. Gevins et al. teaches that alpha and theta bands are implemented to detect sleep states ([COL 29 lines 32-34])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to detect the theta or alpha waves during sleep onset as a means to determine a probable, i.e., light sleep state. Since Stivoric provides for the implementation of an EEG to measure a brainwave, and given that an electronic device is turned off in response to detecting a sleep state, it would have been obvious to detect the various sleep stages, as taught by Stivoric, by measuring either alpha or theta waves as taught by Gevins et al.

28. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sylliassen (USPN 2002/0135474) in view of Shafer et al (USPN 5386247) and in further view of Stivoric et al. (USPN 2007/0100666).

29. As per claim 22, Sylliassen, as modified, does not teach a pressure sensor for generating the detection signal. However, Stivoric et al. teaches a pressure sensor [0099, Table 2 – sleep onset/wake])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to further include a pressure sensor as a means to detect a physiological state. In particular, a sleep onset/wake state of a user. Sylliassen provides for turning off an electronic device upon detecting a sleeping user. Stivoric et al. also provides for turning off an electronic device upon detecting a sleeping user. Since a pressure sensor provides an additional means to determine a sleep onset/wake state of a user, it would have been an obvious means to further detect a sleep state of a user, as taught by Stivoric et al.

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

31. 5479939 – Sleep detecting apparatus

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darrin Dunn whose telephone number is (571) 270-1645. The examiner can normally be reached on EST:M-R(8:00-5:00) 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DD
12/03/2007

David Vincent
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RONALD HARTMAN, JR.
PRIMARY EXAMINER
12/9/2007